Claims

1. A packaging apparatus including a product receiving means which is adjustable so that at least opposite sides thereof can in use be spaced apart appropriate for the width of a product received therein, said product receiving means movable relative to a bag holding means, said bag holding means having a plurality of adjustable bag holding members so that in use a bag positioned about said bag holding members can be opened sufficiently to allow the passage therein of said product receiving means with said product positioned thereon.

2. A packaging apparatus as claimed in claim 1 wherein said product receiving means is in the form of a platen having a base portion and wherein control means are adapted to control the movement of said opposite sides to provide a required amount of compression of the sides of the product.

3. A packaging apparatus as claimed in claim 2 wherein said control means are operatively connected with said bag holding means so that the movement of said sides of said platen is commensurate with an appropriate opening of said bag holding members.

4. A packaging apparatus as claimed in claim 2 or claim 3 wherein said control means includes biasing or pressure means acting to bias or pressure said opposite sides together until a required pressure on the sides of the product is detected.

5. A packaging apparatus as claimed in claim 3 or claim 4 wherein said control means includes a product sizing means having an adjustable opening extending therethrough and through which opening said platen is adapted to pass in moving towards said bag holding means.

6. A packaging apparatus as claimed in claim 5 in which said opening of said product sizing means is adjustable in width dependent on information received relating to the product obtained from a product identification means.

7. A packaging apparatus as claimed in claim 5 or claim 6 in which the adjustable opening includes at least one inclined member adapted to engage with said platen

as it enters said opening in controlling the spacing apart of said sides.

8. A packaging apparatus as claimed in claim 7 including a pair of said inclined members forming a convergent initial part of said opening through which said platen travels.

9. A packaging apparatus as claimed in any one of claims 5 to 8 in which said product sizing means includes a pair of spaced apart substantially parallel members positioned adjacent said bag holding means, the spacing apart of the parallel members being commensurate with the spacing apart of said bag holding members for one of said products.

10. A packaging apparatus as claimed in any one of claims 5 to 9 in which said product sizing means is connected with said bag holding means so that adjustment of said opening of said product sizing means provides an adjustment of said bag holding members.

11. A packaging apparatus as claimed in any one of the preceding claims in which said bag holding members include a plurality of finger-like members adapted to receive thereover a said bag and to be adjustably movable apart so as to engage with an interior of said bag in opening it to receive a said product.

12. A packaging apparatus as claimed in claim 11 in which at least a first pair of said finger-like members are provided which are adapted to move apart transversely so as to engage with respective sides of said bag in opening it out.

13. A packaging apparatus as claimed in claim 12 and including at least a further pair of finger-like members movable substantially vertically relatively to said first finger-like members so as to provide for an adjustable vertical opening of said bag.

14. A packaging apparatus as claimed in any one of the preceding claims including an elongate support means on which said bag holding means is positioned, said product receiving means being adapted to travel longitudinally along said support means from one of its ends with a said product so that said product receiving means with said product enters into a said bag opened out on said bag holding means whereby the product receiving means and a bagged product is then able to

move to an opposite end of said support means distal from said one end.

15. A packaging apparatus as claimed in claim 14 wherein said elongate support means is adapted to enable said product receiving means at said distal end of said support means to invert before the product with the bagged product is removed from the product receiving means, which product receiving means is then able to return to the said one end of the elongate support means to receive a further said product.

16. A packaging apparatus as claimed in claim 14 or claim 15 in which at least a pair of said product receiving means are adapted to travel along said elongate support means, one of said product receiving means being adapted to travel along an upper side of said support means after receiving a said product and the other of said product receiving means is adapted to travel along an underside of said elongate support means after it has discharged said bagged product.

17. A packaging apparatus as claimed in any one of claims 14 to 16 in which said elongate support means includes an elongate beam provided with a transporting means to transport at least one of said product receiving means between said one and said distal ends of said beam.

18. A packaging apparatus as claimed in any one of the preceding claims and including a product feed means adapted to position a said product on said product receiving means.

19. A packaging apparatus as claimed in claim 18 in which said product feed means includes a conveyor which is adapted to be spaced apart above a said product receiving means as said product receiving means moves therebeneath, a product detecting means provided for said conveyor to control movement of the product receiving means relative to said conveyor and the movement of the product from the conveyor onto the product receiving means.

20. A packaging apparatus as claimed in claim 19 in which said product detecting means includes photo electric means provided at or adjacent a discharge end of said conveyor.

21. A packaging apparatus as claimed in any one of claims 18 to 20 in which said product feed means is adapted to pivot from a substantially horizontal position in which it receives a said product to an inclined position extending towards said product receiving means for discharging said product thereon.

22. A packaging apparatus as claimed in claim 21 when dependent on claim 19 or claim 20 wherein detection of a product on said conveyor enables the movement of said product receiving means to travel beneath said conveyor and for the pivoting of said conveyor into said inclined position to discharge said product onto said product receiving means.

23. A packaging apparatus as claimed in any one of the preceding claims and having a product unloading means including a projection means adapted to engage with a bagged product being carried by a product receiving means to remove the bagged product from the product receiving means and for the bagged product to be positioned on a product exit means.

24. A packaging apparatus as claimed in claim 23 in which the product unloading means includes a pivotal plate, an upper portion of which is adapted to engage with said bagged product.

25. A packaging apparatus as claimed in claim 23 or claim 24 in which said product exit means is adapted to be elevated towards said product receiving means as said bagged product is removed therefrom.

26. A packaging apparatus as claimed in claim 25 in which said product exit means includes a first exit conveyor movable between said elevated position to receive said bagged product from said product receiving means and a lowered position in which said bagged product can be fed to a further product exit means.

27. A packaging apparatus as claimed in claim 26 in which the further product exit means includes exit roller means which can be raised from a bagged product receiving position to a raised bag product unloading position.

28. A packaging apparatus as claimed in claim 27 in which the roller means are rotatable about a vertical axis to enable the discharge of the bagged product at a

required angle relative to a direction of travel of said product exit means.

29. A packaging apparatus as claimed in any one of the preceding claims and including a product scanning means which measures at least the size of the product and is operatively connected at least with the bag holding means so that a size of bag commensurate with the product is provided.

30. A packaging apparatus as claimed in claim 29 and further including at least one bag making apparatus operatively connected with said scanning means so that a said bag is made of a size commensurate with the scanned product which is available on the bag holding means prior to the arrival of the product at the bag holding means.

31. A packaging apparatus as claimed in claim 30 including a plurality of said bag making apparatus and wherein a respective said bag making apparatus is selected for the making of said bag depending on information received from the said scanning means.

32. A packaging apparatus substantially as herein described with reference to any one of the embodiments of the invention and as shown in any one or more of the accompanying drawings.

33. A loader for use in the packaging apparatus of any one of the preceding claims and including a product receiving means which is adjustable so that at least opposite sides thereof can in use be spaced apart so as to be appropriate for the width of a product received therein, said product receiving means being in the form of a platen.

34. A loader for use in a packaging apparatus substantially as herein described with reference to any one of the embodiments of the invention and as shown in any one or more of the accompanying drawings.